

What is claimed is:

- 1 1. A liquid crystal display device, comprising:
2 first and second substrates facing and spaced apart from each
3 other;
4 a liquid crystal layer interposed between the first and second
5 substrates;
6 a first polarizer formed under the second substrate and on the
7 opposite side relative to the liquid crystal layer, the first polarizer
8 being made of cholesteric liquid crystal;
9 color filters formed on the second substrate and facing the
10 first substrate, wherein each color filter has one of a plurality of
11 primary colors;
12 a black matrix formed in the boundaries between the color
13 filters, wherein the black matrix is on the second substrate, and
14 wherein the black matrix is made of the same material as the first
15 polarizer; and
16 a backlight device arranged under the second substrate.

1 2. A liquid crystal display device according to claim 1, wherein the color
2 filters are made of the cholesteric liquid crystal.

1 3. A liquid crystal display device according to claim 1, wherein the black
2 matrix reflects the light that passes through the first polarizer.

1 4. A liquid crystal display device according to claim 3, wherein the first
2 polarizer transmits the light that is reflected by the black matrix.

1 5. A liquid crystal display device, comprising:
2 first and second substrates facing each other and spaced apart
3 from each other;
4 a liquid crystal layer interposed between the first and second
5 substrates;
6 a first polarizer formed on the second substrate and facing the
7 liquid crystal layer, the first polarizer being made of cholesteric liquid
8 crystal;
9 color filters formed on the first polarizer and facing the first

FILED SEP 10 2009

10 substrate, wherein each color filter has one of a plurality of primary
 11 colors;
 12 a black matrix formed in the boundaries between the color
 13 filters, wherein the black matrix is on the first polarizer, and wherein
 14 the black matrix is made of the same material as the first polarizer;
 15 and
 16 a backlight device arranged under the second substrate.

1 6. A liquid crystal display device according to claim 5, wherein the color
 2 filters are made of the cholesteric liquid crystal.

1 7. A liquid crystal display device according to claim 5, wherein the black
 2 matrix reflects the light that passes through the first polarizer.

1 8. A liquid crystal display device according to claim 7, wherein the first
 2 polarizer transmits the light that is reflected by the black matrix.

1 9. A liquid crystal display device, comprising:

a backlight device irradiating light;

a polarizer converting the light from the backlight device into

a first circularly polarized light, the polarizer being made of

cholesteric liquid crystal;

color filters coloring the first circularly polarized light into

one of a plurality of primary colors;

a black matrix formed in the boundary between the color

filters, wherein the first circularly polarized light is reflected by the

black matrix and then passes through the polarizer; and

a reflective plate formed in the backlight device,

wherein the first circularly polarized light reflected by the

black matrix and passing through the polarizer is converted as it

reflected by the reflective plate of the backlight device into the second

circularly polarized light,

wherein the second circularly polarized light is reflected by

the polarizer and reaches the reflective plate,

wherein the second circularly polarized light reflected by the

polarizer is converted into the first circularly polarized light, and then

20 the first circularly polarized light passes through the polarizer.

1 10. A liquid crystal display device according to claim 9, wherein the black
2 matrix is made of the same material as the polarizer.

1 11. A liquid crystal display device according to claim 9, wherein the first
2 circularly polarized light is a left-handed circularly polarized light.

1 12. A liquid crystal display device according to claim 9, wherein the first
2 circularly polarized light is a right-handed circularly polarized light.

1 13. The liquid crystal device according to claim 1, further comprising:
2 a retardation film formed on the first substrate and on the
3 opposite side relative to the liquid crystal layer; and
4 a second polarizer formed on the retardation film.

1 14. The liquid crystal device according to claim 1, wherein said primary
2 colors are red, blue and green.

1 15. The liquid crystal device according to claim 5, further comprising:
2 a retardation film formed on the first substrate and on the
3 opposite side of the liquid crystal layer; and
4 a second polarizer formed on the retardation film.

1 16. The liquid crystal device according to claim 5, wherein said primary
2 colors are red, blue and green.

1 17. The liquid crystal device according to claim 9, wherein said primary
2 colors are red, blue and green.